Ad-Evoked Feelings

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Ad-Evoked Feelings: Structure and Impact on A_{ad} and Recall

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We examine the structure of feelings that consumers experience concurrently during exposure to print advertising and analyze how the structure affects advertising processing and effectiveness. In study 1, a three-dimensional structure of the experienced similarity of feelings is found: pleasantness, intensity, and direction. In study 2, three distinct bundles of feelings that consumers experience concurrently during exposure to a set of print advertisements are recovered using three-mode principal components analysis: unpleasant feelings, low-intensity pleasant feelings, and high-intensity pleasant feelings. Unpleasant feelings and low-intensity pleasant feelings have a significant impact on attitude to advertisement (A_{ad}), high-intensity pleasant feelings have a significant impact on advertising recall, and A_{ad} and advertising recall are uncorrelated. Our results emphasize the importance of broad bundles of concurrently evoked feelings in advertising processing and effectiveness. J BUSN RES 1996. 37.105–114

Although it is commonly agreed that effective advertising evokes specific feelings in the target audience (e.g., Aaker and Myers, 1987; Brown and Stayman, 1992; Rossiter and Percy, 1987), the precise role that ad-evoked feelings play in advertising processing is still not well understood. Ray and Batra's (1983 p. 544) statement that "an inadequate understanding of the role of affect in advertising has probably been the cause of more wasted advertising money than any other single reason" still waits for revision.

Several typologies of distinct feelings that can be evoked by advertising have been proposed (e.g., Aaker, Stayman, and Vezina, 1988; Batra and Holbrook, 1990; Zeitlin and Westwood, 1986). Such typologies of feelings may be useful in copy-testing and similar situations, such as when advertisers want to assess the extent to which a proposed ad stimulates excitement instead of happiness in a target audience. In such situations interest lies in distinguishing specific feelings that advertisements may target and evoke.

Currently, we know relatively little about the specific feelings that consumers experience concurrently during exposure to advertising, and about the way the structures of these feelings impact advertising effectiveness. It is important to analyze structures of concurrently experienced feelings because conceptually distinct feelings may actually be experienced concurrently (cf. Batra and Holbrook, 1990), whereas conceptually similar feelings may not be experienced concurrently.

The goal of the present research is to examine the structure of feelings that consumers experience concurrently during exposure to print advertisements and to determine the impact of the structure of these feelings on attitude toward the advertisement (A_{ad}) and advertising recall. In the next section we present the conceptual background and derive hypotheses to be tested.

Conceptual Background

Structure of Ad-Evoked Feelings

There is general agreement that consumers have a limited number of basic, discrete emotions with different properties that impact on experience, motivation, and behavior (cf. Plutchik, 1980; Ekman, 1992). Diener and Larsen (1993) stress that although studying basic, discrete emotions is worthwhile, it is often more advantageous to investigate global or average levels of pleasant and unpleasant emotions. They argue that situations that produce a specific unpleasant emotion, such as fear, also often produce other unpleasant emotions, such as anger or sadness. Moreover, "many of the cognitive and behavioral tendencies that occur with specific emotions are likely to occur with other emotions of the same hedonic valence" (Diener and Larsen, 1993, pp. 406–407). In line with this, we believe that it

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is worthwhile to examine which feelings consumers experience concurrently during exposure to advertising as well as the effects that these bundles of ad-evoked feelings have.

Pleasant and unpleasant feelings are often statistically independent as one may feel positive and negative (almost) at the same time (Watson and Tellegen, 1985). In a specific advertising context, Madden, Allen, and Twible (1988) found that pleasant and unpleasant feelings elicited by humorous and nonhumorous radio commercials were independent. Hence, bundles of pleasant and unpleasant ad-evoked feelings should generally be distinguishable. Research suggests that a further distinction within pleasant feelings may also be important.

Most people experience pleasant feelings most of the time, although usually at low levels of intensity (Diener and Larsen, 1993). While low-intensity pleasant feelings are so common that they constitute a baseline of affective experience, intense pleasant feelings are fairly rare. As a consequence, consumers may tend to experience (regular) low-intensity pleasant feelings independently of (rare) high-intensity pleasant feelings, because the latter inform the individual of something special. A distinction between low and high-intensity pleasant feelings seems particularly relevant when consumers are exposed to advertising, because a substantial amount and sometimes the majority of advertising is designed to evoke pleasant feelings in the target audience (e.g., Madden and Weinberger, 1984; McQuarrie and Mick, 1992). Common, low-intensity pleasant ad-evoked feelings may stimulate consumers to simply continue exposure to advertising, perhaps for entertainment reasons. Rare, high-intensity pleasant feelings contain significant informational value (Petty, Gleicher, and Baker, 1991), and they stimulate orienting responses such as increased attention and more intense comprehension processes (Isen, 1993). Unpleasant feelings, whether of low or high-intensity, contain significant informational value as well, and they motivate advertising avoidance either passively, by lowering attention, or actively, by zapping or zipping.

This review suggests that consumers experience three broad bundles of feelings concurrently during exposure to advertising: low-intensity pleasant feelings, high-intensity pleasant feelings, and negative feelings. Some evidence supports the hypothesized structure of ad-evoked feelings (Holbrook and Westwood, 1983, described in Holbrook, 1986; Burke and Edell, 1989).

Impact of Ad-Evoked Feelings

A_{ad} is the overall evaluation of an advertisement by consumers. Research indicates that better-liked ads lead to more positive brand attitudes (MacKenzie, Lutz, and Belch, 1986) and that A_{ad} is a good indicator of advertising effectiveness (Haley and Baldinger, 1991). In a meta-analysis of 47 published studies, Brown and Stayman (1992) found that A_{ad} influenced brand attitude directly through a mechanism of affect transfer and that it influenced brand attitude indirectly through brand cognitions. Because they could only establish general effects of feelings on attitudes, Brown and Stayman (1992, p. 48) suggest that "it would be useful to carefully identify the nature and strengths of effects that different feelings and different feeling executions have on ad attitudes and related advertising outcomes." In a relevant study, Burke and Edell (1989) found that unpleasant feelings and, to a lesser extent, low-intensity pleasant, feelings influenced A_{ad}.

Emotionally charged material, particularly if it is extreme and pleasant, tends to be remembered better than nonemotional material (Brewer 1988). Beattie and Mitchell (1985) found that distinctive advertisements tend to be recalled better than non-distinctive advertisements. Because advertisements that evoke high-intensity pleasant feelings are likely to be distinctive, it is likely that such advertisements are recalled better than other ads.

After analyzing the relationship between advertising recall and brand attitudes, Beattie and Mitchell (1985, p. 152) conclude that, "there does not seem to be any strong empirical justification for implying, in general, that the advertisements that were recalled were more persuasive." After a review of eight studies that examined the relationship between advertising recall and attitude change, Gibson (1983) came to a similar conclusion. Our present analysis suggests a possible mechanism underlying the obtained results; if A_{ad} is strongly influenced by the pleasantness of ad-evoked feelings, and if advertising recall is strongly influenced by the intensity of ad-evoked feelings (next to other, non-affective, factors), A_{ad} and advertising recall will be (largely) unrelated, because pleasantness and intensity are uncorrelated.

Three-Mode Analyses of Ad-Evoked Feelings

To establish the generality and stability of the structure of ad-evoked feelings and its impact on A_{ad} and advertising recall, feelings should be assessed across subjects and across a range of advertisements, exposure situations or media. This calls for research in which three-mode data (subjects × feelings × advertisements, media and so forth) are analysed. For several reasons, three-mode analyses are not common in advertising research.

First, it is common in advertising research (e.g., Stout and Leckenby, 1986) to collect only two-modal data (subjects × feelings). Second, three-mode data are frequently analyzed using a two-mode approach. Three-mode data may be reduced to two-mode data by aggregating across advertisements (e.g., Burke and Edell, 1989). Then, potentially relevant differences between advertisements in the feelings they evoke in consumers may be ignored. Yet, differences between ads are frequently a main concern in marketing practice. For instance, agencies and clients may want to determine which of several possible ads will function best in evoking pleasant feelings. Three-mode data may be reduced to two-mode data by aggregating across subjects (e.g., Batra and Holbrook, 1990). Although this allows

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a comparison of ads on the feelings they evoke, relevant differences between subjects may be ignored. Yet, it is often important in marketing practice to know whether (groups of) consumers, e.g., users and nonusers, react differently to advertisements.

In summary, a priori aggregation across one of the modes of the data cube is undesirable from both a conceptual and a practical point of view. It is also undesirable from a methodological point of view, because it increases the risk of outlying elements in the mode across which the aggregation takes place to bias the analyses (van der Kloot and Kroonenberg, 1982). In particular, when one of the modes in the data cube has only a few elements, an element with a deviating response pattern may distort the results significantly.

Both for substantive and methodological reasons, we will collect three-mode data on ad-evoked feelings, and we will apply three-mode principal components analysis to examine the relationships between the modes in the data cube and to analyze outliers. The usefulness of three-mode principal components analysis in other marketing situations has been shown since its pioneering use by Belk (1979) in research on gift-giving.

Because the task to indicate multiple feelings for multiple ads is very intensive, subject sample sizes in research following a three-mode approach are sometimes small. For instance, Batra and Holbrook (1990) used only 12 judges, each of whom provided 72 (commercials) × 109 (feelings) = 7,848 responses. This situation is similar in Q-methodology research where the preference for large statement samples may lead to small subject samples "in keeping with the behaviorist dictum that it is more informative to study one subject for 1,000 hours than 1,000 subjects for one hour" (McKeown and Thomas, 1988, p. 36).

Here, we attempt to balance an intensive task with a sufficiently large subject sample size. In study 1, dominant dimensions in the emotional experience of consumers are examined using an intensive sorting task. The results are used to develop a comprehensive but efficient set of potential ad-evoked feelings, which is subsequently used in study 2 to analyze the structure of ad-evoked feelings across multiple advertisements.

Study 1: Similarity of Feelings

Subjects, Stimuli, and Procedure

Two subject samples were studied. The first sample consisted of 38 undergraduate students at a large university in The Netherlands (mean age = 22.5, SD = 2.1; 28 men and 10 women). The second sample consisted of 15 professionals from a market research company in The Netherlands (mean age = 34.4, SD = 8.2; 11 men and four women). By including these two samples, the stability of the structure in feelings across different samples could be explored. Although the samples do not represent the public in general, both are accustomed to making fine discriminations, which was a goal of the first study.

We prepared a list of 50 potential ad-evoked feelings from general emotion theory (e.g., Ekman, 1992; Plutchik, 1980; Watson and Tellegen, 1985) and specific advertising reaction profiles (Leavitt, 1970; Wells, 1964; Zeitlin and Westwood, 1986). Each feeling was typed separately on a small card. Subjects were instructed to sort the 50 feelings into groups (minimum = 2, maximum = 40) on the basis of their experienced similarity. Unique feelings could be placed separately. The sorting task was performed individually in a quiet room. Data collection took about 30 minutes on average.

Results

The number of groups varied between four and 33 (mean = 13.9, SD = 6.5). To examine the common structure in feelings, individual difference scaling, INDSCAL, (Arabie, Carroll and DeSarbo, 1987) was performed, treating the two samples as separate sources. INDSCAL performs multidimensional scaling of three-mode data. The model assumes that a common set of dimensions underlies the groupings of feelings by the two samples. Samples may differ in the weights that they attach to the dimensions.

The proportion of subjects in each sample that grouped a pair of feelings together was used as the similarity measure. Kruskal's stress values for the 2-, 3-, and 4-dimensional solutions were respectively 0.26, 0.19, and 0.16. A three-dimensional solution was chosen because it represented the data adequately in a few dimensions. Object weights of the feelings and source weights of the samples in the three-dimensional solution are presented in Table 1.

Feelings are ordered in Table 1 with respect to their weights on the first dimension (negative to positive). To facilitate interpretation of the results, k-means clustering (Aldenderfer and Blasfield, 1984) was performed on the object weights of the feelings. In the four-cluster solution, all three dimensions discriminated significantly between the 50 feelings (F-values of the first, second and third dimension are respectively 83.10, 46.92, and 33.69, all with df = 3,46 and p = .000). The four-cluster solution was readily interpretable. In the three-cluster solution, the third dimension did not discriminate significantly between feelings. Cluster membership of the feelings is indicated with capitals in the column labeled "cluster" in Table 1. Object weights and cluster membership are used to interpret the solution.

The first dimension dominates the solution (overall importance = 0.51) and differentiates pleasant feelings (optimistic, tender, gay, in love) from unpleasant feelings (pessimistic, irritated, jealous). Accordingly, it is labeled "pleasantness." The second dimension differentiates high-intensity feelings (upset, confused, in love) from low-intensity feelings (self-confident, careless, cool, bored). Hence, it is labeled "intensity." A plot of the first and second dimensions of the INDSCAL solution closely resembles the two-factor model of affect proposed by Watson and Tellegen (1985) but rotated 180 degrees. The third dimension is identical to the dominance-submissiveness dimension found by Russell and Mehrabian (1977) and the responsibility and control dimension found by Smith and Ells-

Table 1. Three-dimensional INDSCAL-Solution: Object and Source Weights

Feelings	Dim. 1	Dim. 2	Dim. 3	Cluster
Playful	−1.42	−0.12	−0.64	*A
Optimistic	−1.42	0.02	−0.29	A
Gay	−1.40	−0.31	−0.62	*A
Relaxed	−1.38	0.35	0.17	A
Spontaneous	−1.37	0.05	−0.47	A
Interested[a]	−1.36	0.39	0.73	*A
Congenial	−1.34	0.22	−0.13	A
Active	−1.33	0.27	−0.42	*A
Mollified[b]	−1.28	−0.80	0.11	*A
Delighted	−1.27	−0.54	−0.67	A
Tender	−1.24	−0.77	0.10	A
In love	−1.16	−0.90	−0.85	A
Grateful	−1.06	−0.64	1.35	A
Excited	−1.02	−0.67	−1.31	*A
Compassionate	−0.99	−0.41	1.00	A
Curious	−0.96	0.99	0.01	*A
Amused	−0.94	−0.43	−1.43	A
Proud	−0.89	1.27	0.59	*B
Selfconfident	−0.80	1.53	0.68	B
Respectful	−0.37	−0.22	1.94	C
Crazy	−0.28	−0.37	−1.89	D
Neutral	−0.21	1.52	1.61	B
Sentimental	0.05	−1.61	0.26	*C
Cool	0.33	1.82	0.95	B
Stubborn	0.52	1.67	−0.78	D
Detached	0.59	1.68	0.85	B
Prudish	0.63	1.22	0.74	B
Worried	0.65	−1.51	0.85	*C
Careless	0.72	1.42	1.14	B
Submissive	0.82	−0.37	1.64	C
Sad	0.83	−1.61	0.68	*C
Ugly	0.85	0.58	−1.62	D
Bored	0.85	1.61	0.27	*B
Helpless	0.88	−1.19	1.02	C
Confused	0.88	−1.35	0.32	*C
Jealous	0.89	−0.44	−1.10	D
Gruff	0.90	1.30	−0.73	D
Guilty	0.91	−0.46	1.61	*C
Afraid	0.92	−1.41	0.69	*C
Disappointed	0.94	−1.31	0.88	C
Suspicious	0.95	1.11	−0.57	*D
Fearful	0.96	−1.49	0.59	C
Upset	0.99	−1.36	0.03	C
Indignant	1.02	0.38	−1.44	D
Abhorrent	1.05	0.00	−1.59	D
Aggressive	1.09	0.25	−1.19	D
Resentful	1.09	0.27	−1.44	D
Furious	1.13	0.41	−1.25	D
Irritated	1.13	0.62	−1.14	*D
Pessimistic	1.14	−0.47	0.77	C
SOURCES:				
Student Sample	0.80	0.34	0.23	
Professional Sample	0.61	0.43	0.36	
IMPORTANCE	0.51	0.15	0.09	

[a] Prior to study 2, this item was worded negatively, "uninterested."
[b] The Dutch item is difficult to translate and expresses "feeling pacified and soft."

worth (1985). It differentiates feelings that "originate in others" (feeling respectful, grateful, guilty) from feelings that "originate in the person" and that are directed to others or to the self (feeling aggressive, amused, jealous). This dimension is labeled "direction."

Both students and professionals attach the highest weight to the first dimension, pleasantness. Inspection of the source weights shows that compared with students, professionals use the dimensions in a more balanced way. The first dimension dominates the solution of the students much more than it does the solution of the professionals.

Seventeen representative feelings (indicated by an asterisk in the columns "cluster" in Table 1) were selected as the feeling set to be used in the second study. Selection was based on (1) the object weights of feelings in the INDSCAL solution, (2) the likelihood that the feelings are the target or effect of advertising, and (3) the distribution of feelings across clusters. After adding an extra item, "friendly," the final set consisted nine pleasant and nine unpleasant feelings.

Study 2: Bundles of Feelings Evoked by Advertising

Subjects and Stimuli

Forty-seven undergraduate economics students (24 women, 23 men, mean age 22 years) at a large university in The Netherlands participated in the study that took 75 minutes on average to complete. An issue of a national general-interest magazine was used to create a realistic stimulus set. The issue contained 53 advertisements for 51 products (goods, services, organizations, public service). Thirteen ads from the issue were chosen that differed in size (from half a page to a double-spread) and in the use of color, that were representative of the ads in the magazine, and that offered products relevant for the subjects. The final set consisted ads for two banks, a utility firm, two brands of cars, a foundation offering knowledge, a photocamera, a light bulb, gasoline, bourbon, a car repair paste and two brands of home-entertainment electronics (advertised brands are indicated in the lower half of Table 2). The choice situations depicted in the ads varied in personal relevance and in purchase motivation (Rossiter and Percy, 1987), as revealed by a pretest with nine subjects.

Procedure

Data collection took place on two consecutive days. On the first day, ad-evoked feelings and attitudes were assessed. Subjects participated in groups of five to 10 individuals. Upon entering the room, subjects received a copy of the magazine and an envelope containing instructions and a set of questionnaires. The questionnaire for each separate ad had two parts. The first part contained the 18 feelings that resulted from study 1. Feeling items were accompanied by the following 7-point response alternatives: "not at all," "a little bit," "a bit," "fair," "much," "very

Table 2. Loadings of Ad-Evoked Feelings and Advertisements in the 2 × 2 × 1 Solution

	Label	Comp. 1	Comp. 2	Cluster
Feelings:				
Suspicious	sus	0.36	−0.16	A
Irritated	irr	0.36	−0.11	A
Bored	bor	0.34	0.03	A
Uninterested	uni	0.34	−0.10	A
Confused	con	0.25	−0.06	A
Sad	sad	0.12	0.12	A
Worried	wor	0.06	0.08	A
Mollified	mol	−0.10	0.41	B
Proud	pro	−0.11	0.09	B
Sentimental	sen	−0.12	0.38	B
Curious	cur	−0.16	0.15	B
Excited	exc	−0.21	−0.27	C
Friendly	fri	−0.24	0.38	B
Active	act	−0.27	−0.53	C
Playful	pla	−0.28	−0.26	C
Gay	gay	−0.34	−0.16	C
Advertisements:				
Andromeda	A1	0.55	−0.16	D
Solofix	A2	0.45	−0.19	D
Skoda	A3	0.22	0.05	E
Postbank	A4	0.11	0.23	E
Minolta	A5	0.02	−0.04	E
Sony	A6	0.01	0.09	E
Q8	A7	−0.03	0.15	E
Gasbedrijven	A8	−0.11	0.22	E
NMB	A9	−0.20	−0.53	F
Four Roses	A10	−0.22	0.37	G
Philips	A11	−0.33	0.32	G
Renault 5	A12	−0.47	−0.52	F
VAF		23%	4%	

much," and "completely." Subjects indicated the extent to which they experienced each of the feelings during exposure to the specified ad. In the second part of the questionnaire, A_{ad} was assessed using two items with 5-point response alternatives: "In all, this advertisement is to me . . . very attractive–very unattractive, and very good–very bad." The average score on the two items formed a measure of A_{ad}. To control for the effects of advertisement order and for fatigue, the order in which the ads were evaluated was randomized across subjects. Also, the order of feeling items in the questionnaires was randomized across ads and subjects. After completing all questionnaires, subjects were thanked and dismissed.

On the second day, a surprise advertising recall measure was administered by telephone. Thirty-eight of the original 47 subjects could be contacted by telephone. These subjects were asked to recall all advertisements ("For which brands did you evaluate an advertisement yesterday") through an unaided recall question. The measure was scored as yes–no.

Inspection of the data prior to the analyses revealed that the feelings afraid and guilty had very low mean scores across advertisements (respectively 1.17 and 1.15, on a scale from 1 to 7). After discarding these two feelings, the data cube contained 47 (subjects) × 16 (feelings) × 13 (advertisements) = 9,776 data points.

Three-Mode Principal Components Analysis

To analyze the three-mode data (subjects × feelings × advertisements), three-mode principal components analysis was performed with the Tucker3 model (Tucker, 1966). The least squares estimation procedure implemented in the TUCKALS3 program was used, because this enables a detailed interpretation of the core matrix and the model fit (Kroonenberg and de Leeuw, 1980; Kroonenberg, 1985). In three-mode principal components analysis separate component loadings are simultaneously determined for each of the three modes: subjects, feelings, and advertisements. In the Tucker3 model a score z_{ijk} for an advertisement i on a feeling item j given by a subject k is modeled as:

$$z_{ijk} = \sum_{p=1}^{s} \sum_{q=1}^{t} \sum_{r=1}^{u} a_{ip}\, b_{jq}\, c_{kr}\, g_{pqr} + e_{ijk} \qquad (1)$$

where:

a_{ip} = loading of advertisement i on the p-th advertisement component,

b_{jq} = loading of feeling j on the q-th feeling component,
c_{kr} = loading of subject k on the r-th subject component,
g_{pqr} = pqr-th element in the core matrix indicating the importance and direction of the relationship between the p-th, q-th, and r-th components,
e_{ijk} = residual from the model, error term.

As parameters in the TUCKALS3 procedure are fitted using alternating least-squares estimation, the total sum of squares can be represented as:

$$SS(DATA) = SS(FIT) + SS(RESIDUAL) \qquad (2)$$

where the fitted sums of squares (SS(FIT)) are reconstructed from the estimated parameters in the model presented in equation 1. Because equation 2 also holds for each specific element f (advertisement, feeling, or subject) of a mode in the data cube (Kroonenberg and de Leeuw, 1980; van der Kloot and Kroonenberg, 1982), a detailed search for outliers is possible. Outliers are elements with a small SS(FIT) and a large SS(RESIDUAL). In other words, by comparing the fitted sum of squares and the residual sum of squares of the f-th element, the extent to which the configuration for the f-th element corresponds with the overall configuration can be determined. Prior to the analyses, the data were double centered per subject matrix to remove unwanted sources of variance.

Contrary to traditional principal components analysis, the scree test cannot be used to determine the number of components to retain because only contributions of the number of components included in the analysis are provided. Moreover, solutions with different numbers of components are not nested. Because changing the number of components in one of the modes affects the solutions of the components in all three modes, the choice of a final solution is strongly based on substantive theory and interpretation of the components.

Results

Analysis of Outliers

To allow a detailed analysis of outliers, we first fit two components to each mode of the data cube, leading to a 2 × 2 × 2 model. The model accounted for 25% of the sums of squares. The second subject component distinguished a single subject from the rest. Inspection of the raw data revealed that the outlier's response pattern was in part reversed from the patterns of the other subjects (e.g., different feelings co-occurred across the ads).

After dropping the outlying subject, the 2 × 2 × 2 model was refitted to the data. It accounted for 26% of the sums of squares. The second advertisement component distinguished a single advertisement from the rest. In a separate multidimensional scaling analysis, performed on the correlation matrix of the feelings for the outlying advertisement, the first dimension was identical to the first feeling component in the three-mode analysis, but the second dimension was different and uninterpretable. Consequently, the advertisement was dropped for the final analysis. Next, the 2 × 2 × 2 model was again refitted to the data. The first and second subject components in this model accounted for respectively 25% and 5% of the total sums of squares. Thus, the second component was relatively unimportant, primarily because several subjects had hardly any loading on it. Moreover, when a 2 × 2 × 1 model was fitted to the data, the single subject component accounted for 27% of the total sums of squares.

Accordingly, the 2 × 2 × 1 model was further explored, with a single component fitted to the subjects. In the model, subjects are treated as replications with different weights for a single configuration. Although the 2 × 2 × 1 model had only a moderate fit value, 27%, it is relatively high compared to the maximum attainable in the present situation. This is shown by the results of regular principal components analyses in which we aggregate across one of the modes of the data cube; two components accounted for respectively 40% of the variance in ads and 50% of the variance in feelings, and a single component accounted for 33% of the variance in subjects. The final data cube consists of 46 individuals, 16 feelings, and 12 advertisements.

Component loadings of feelings and advertisements in the 2 × 2 × 1 solution are presented in Table 2. Separate k-means cluster analyses were performed on the feeling and advertisement component loadings to facilitate the interpretation of the solution. For the feelings, a three-cluster solution was optimal (F-values for components 1 and 2 are respectively 50.56 and 21.72, both with $df = 2,13$ and $p < .000$); in the two-cluster solution the significance of the components was considerably lower, whereas the solution was also more difficult to interpret. Cluster membership is denoted in the last column of Table 2. For the advertisements, a four-cluster solution proved best (respective F-values for the first and second components are 20.78 and 44.33, both with $df = 3,8$ and $p < .000$). Cluster membership is indicated in the last column of Table 2. The joint-plot of feelings-by-advertisements is presented in Figure 1. Labels in the plot correspond with the labels in Table 2.

As in study 1, the pleasantness and intensity components appear. The joint-plot in Figure 1 and the cluster results in Table 2 reveal three clear bundles of ad-evoked feelings: unpleasant feelings at the right of the plot, low-intensity pleasant feelings at the left top part of the plot, and high-intensity pleasant feelings at the left bottom part of the plot.

The plot of the ads can also be readily interpreted. Two ads (A9 and A12) are dominated by high-intensity pleasant feelings. One of the ads was for a bank; it pictured a person on a hang glider over a cliff. Two ads (A10 and A11) are dominated by low-intensity pleasant feelings. One of the ads showed a room where, as suggested by the shadow on the wall, two people were dancing closely by the light of a special lightbulb. Two ads score high on unpleasant feelings (A1 and A2). In one of the ads a man and woman talk about the merits of a car repair

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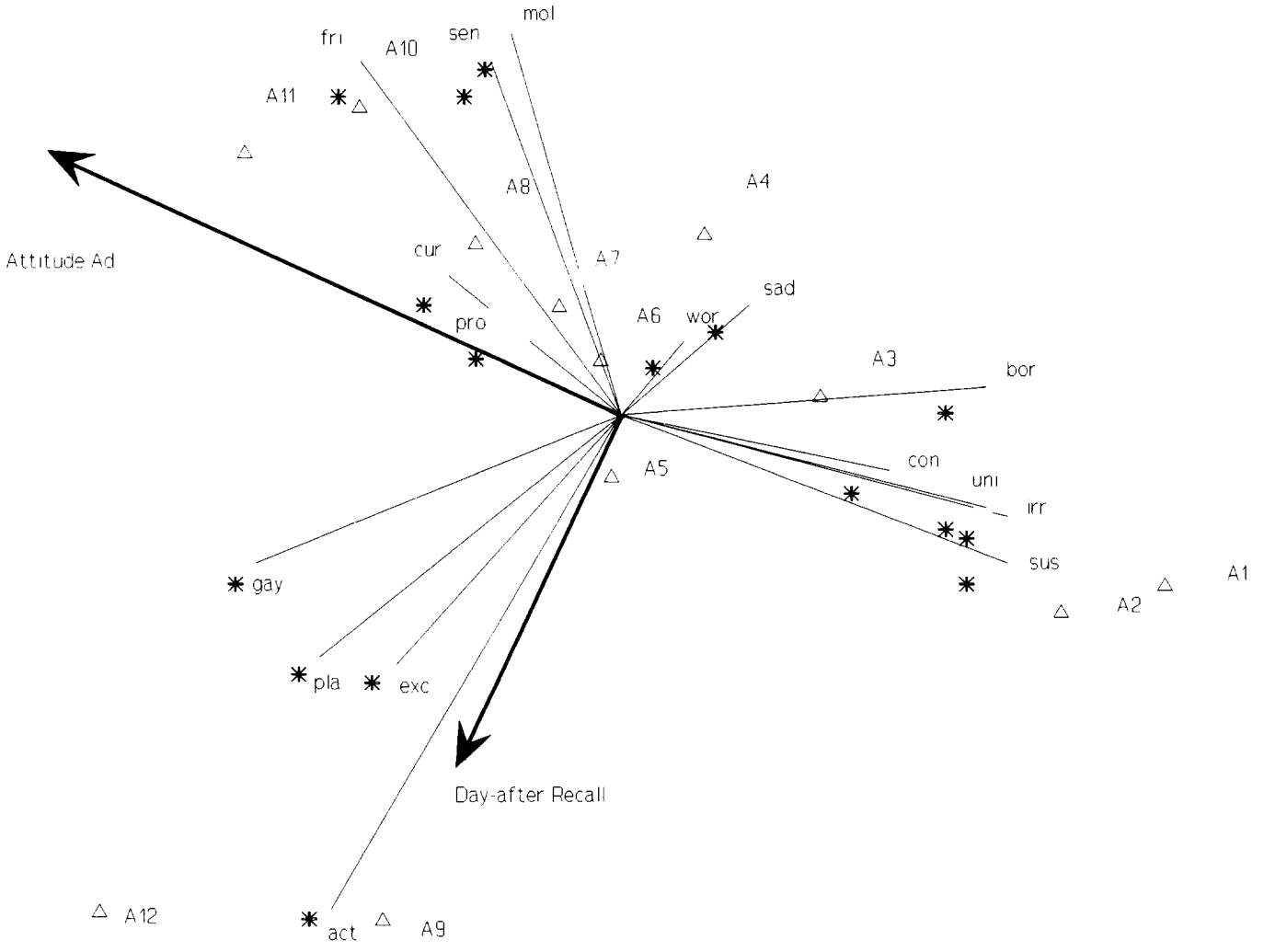

Figure 1. Joint-plot of ad-evoked feelings and advertisements.

paste. The other ads score less dominantly on a particular bundle of feelings.

Inspection of the core matrix G reveals that 86.3% of the SS(FIT) of the subject component can be accounted for by the combination of the pleasantness feeling component and the first advertisement component, whereas 13.7% of the SS(FIT) is accounted for by the combination of the intensity feeling component and the second advertisement component. These results indicate that although the pleasantness component is dominant, the intensity component accounts for a substantial portion of variance in ad-evoked feelings.

Ad-Evoked Feelings, A_{Ad}, and Advertising Recall

To analyze the relationship between the bundles of ad-evoked feelings, A_{ad}, and advertising recall, a dimensional approach was followed first, using the results of the three-mode principal components analysis. Because the previous analysis indicated that subjects can be treated as replications, the data were aggregated accordingly. A property-fitting analysis using the program PROFIT (Green, Carmone, and Smith, 1989) was applied to relate information about A_{ad} and advertising recall to the feelings-by-advertisements joint-plot. In the analysis, scores of the advertisements on the advertisement components act as independent variables. Mean scores of the 12 advertisements on A_{ad} (overall mean = 3.34, SD = 0.58) and the proportion of subjects recalling each ad the day-after (overall mean proportion = 0.61, SD = 0.19) act as dependent variables. The analyses are summarized in the top panel of Table 3.

The results of the property-fitting analysis are plotted in Figure 1 as vectors. They show that A_{ad} is positively related to the pleasantness component. The simple correlation between A_{ad} and the pleasantness component is -0.90 ($p < .000$). The more an advertisement evokes pleasant feelings and the less it evokes unpleasant feelings, the more positive A_{ad} is. Day-after recall is related to the intensity component, although the correlation is not very strong ($r = -0.42$, $p < .09$). Advertisements that elicit intense pleasant feelings tend to be recalled better the day after than advertisements that elicit pleasant but less

intense feelings. The correlation between the vectors in the property-fitting analyses is zero (0.00) indicating that advertising recall is uncorrelated with A_{ad}.

Next, we constructed three separate feelings scales to analyze in more detail the impact that bundles of feelings have on A_{ad} and advertising recall. A high-intensity pleasant feelings scale was constructed by summing the scores of the four relevant items (playful, gay, excited, active; Cronbach's alpha = 0.87). A low-intensity pleasant feelings scale was constructed by summing the scores of the three relevant items (friendly, mollified, sentimental; alpha = 0.75). An unpleasant feelings scale was constructed by summing the scores of the five unpleasant feelings (bored, irritated, confused, uninterested, suspicious; alpha = 0.82). Scores on the scales were calculated for each advertisement separately, after aggregating across subjects. This aggregation is allowed, as the three-mode analysis revealed a single dominant subject component. All item-total correlations for the three scales were significant at $p < .05$.

As expected, the high-intensity and low-intensity pleasant scales correlated significantly (0.72, $p < .05$), whereas neither the high-intensity pleasant scale nor the low-intensity pleasant scale correlated significantly with unpleasant feelings (respective correlations are −0.27 and −0.34). Multiple regression analyses were performed to analyze the relationships between the three bundles of ad-evoked feelings and respectively A_{ad} and advertising recall, using the 12 advertisements as observations. The results, presented in the bottom panel of Table 3, confirm the significant association between unpleasant feelings and A_{ad}, and the significant association between high-intensity pleasant feelings and advertising recall.

Conclusion and Implications

The structure of the emotional experience of advertising was examined in two studies. In the first study, dimensions underlying the perceived similarities of feelings were captured. In the second study, bundles of feelings that are experienced concurrently and their impact on two indicators of advertising effectiveness, advertising recall and A_{ad} were investigated. Both studies confirm the importance of pleasantness and intensity in the feelings that consumers experience. The results of study 2 suggest that the structure of ad-evoked feelings is relatively simple and that it can be accounted for by a few components. The fact that a large part of the variance in ad-evoked feelings cannot be accounted for by a common structure indicates that considerable variability exists in subjects' affective reactions to advertisements. The results stress the relevance of distinguishing unpleasant from pleasant feelings, and high-intensity from low-intensity pleasant feelings.

Table 3. Impact of Ad-Evoked Feelings on A_{Ad} and Recall

Predictors	A_{Ad}[a]	p	Recall	p
Profit Analysis				
Feeling component 1	−0.94	*	0.34	
Feeling component 2	0.34		−0.94	*
Adj. R-square	0.91	*	0.30	*
Regression Analysis				
Unpleasant	−0.78	*	−0.13	
Low-intensity pleasant	0.27		−0.07	
High-intensity pleasant	0.02		0.68	*
Adj. R-square	0.93	*	0.46	*

[a] Standardized regression weights are presented; significance level: * = $p < .05$.

Our results extend the results of Burke and Edell (1989) and Westwood and Holbrook (in Holbrook 1986). A similar structure in ad-evoked feelings was found across cultures and advertising media, using different data collection and analytic approaches. This suggests that the structure might represent fundamental bundles of feelings that advertising evokes in target audiences. The structure was related to attitudes and advertising recall in the hypothesized way. Advertising recall was unrelated to attitude toward the ad. The results of study 2 suggest that an explanation for the frequently observed independence of A_{ad} and brand attitudes on the one hand, and advertising recall on the other (e.g., Gibson, 1983; Beattie and Mitchell, 1985), lies in the emotional structure that impacts on the two types of variables. Whereas A_{ad} is predominantly driven by the pleasantness of ad-evoked feelings, advertising recall is driven by the intensity of ad-evoked feelings, and pleasantness and intensity tend to be unrelated. Advertising agencies and clients that use advertising recall as an indicator of effectiveness may attempt to evoke high-intensity feelings in the target audience. As a result they may develop campaigns that are remembered but not necessarily liked for brands that may not be bought.

A limitation of the present research concerns the relatively small subject sample sizes, which may decrease the reliability of the results. Only 53 subjects participated in study 1, and 47 subjects participated in study 2. Larger subject sample sizes would have been preferable. However, in an effort to intensively analyze the structure of feelings across advertisements, we chose a Q-methodological approach (McKeown and Thomas, 1988) and focused primarily on the feeling sample. We do not think that small subject sample sizes have led to substantial unreliability. Unreliability in study 1 would tend to result in large stress values and in difficulty in obtaining a dominant, clearly interpretable solution. However, the solution has a satisfactory stress value, and the feeling structure is consistent with results in mainstream emotion theory and research (e.g., Russell and Mehrabian, 1977; Smith and Ellsworth, 1985; Watson and Tellegen, 1985). This is comforting because both specific ad-evoked feelings and general feelings were selected, and two different subject samples, in a specific culture were investigated. Similarly, the results of study 2 were as hypothesized and in line with the results of related research. Moreover, the relatively small subject sample size in study 2 should be weighed against the fact that ad-evoked feelings were assessed across multiple advertisements. Measures of feelings are likely to gain in reliabil-

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ity if assessed across multiple advertisements. If we would have performed a two-mode analysis on the three-mode data in study 2, the final data matrix would have contained 46 (subjects) × 12 (advertisements) = 552 observations, which is sizable. Instead of doing this, we used the more appropriate three-mode principal components analysis because it yields in-depth information about patterns of advertisements, feelings, and their relationships. Despite such considerations, larger subject sample sizes are recommended in future three-mode analyses of ad-evoked feelings.

Future research may also try to distinguish between feelings *expressed* in advertising, feelings that consumers *recognize* in advertising (cognitive empathy), and feelings that consumers actually *experience*. In real life, consumers may recognize many of the feelings expressed in advertising, but may experience only few. Also, strong expressed feelings may lead to weak experienced feelings, and the other way around. Advertising expressing strong pleasant feelings about a new candy bar may leave most of the audience cold or bored. A neutral announcement that the Jaguar sportscar can be obtained at a temporary 30% price discount may elicit very intense feelings.

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